

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

Claims 1-6 (Cancelled).

7. (Currently Amended) A semiconductor laser device fabricating method including:

forming a first cladding layer of a first conductivity type, an active layer having a quantum well structure, and a first second cladding layer of a second conductivity type successively on a semiconductor substrate of the first conductivity type;

forming on the first second cladding layer a mask pattern for impurity implantation, having an opening in a region where a resonator facet of a semiconductor laser device is to be formed;

disordering a region of the active layer near the resonator facet by introducing impurities using the mask pattern as a mask;

applying pump light to the disordered region and to a non-disordered region of the active layer to generate photoluminescence therefrom, measuring wavelengths of the photoluminescence from the disordered region and from the non-disordered region, and predicting a catastrophic optical damage (COD) power level that the laser device, when completed, can withstand based on a blue shift between the wavelengths of the photoluminescence from the disordered region and the non-disordered region;

forming a second second cladding layer of the second conductivity type on said first second cladding layer, after removing the mask pattern;

forming on said second second cladding layer a stripe-shaped mask pattern, opposed to the disordered region of the active layer, and extending across the first and second second cladding layers, the stripe-shaped mask pattern extending in a resonator lengthwise direction; and

forming an optical waveguide including the second second cladding layer with the stripe-shaped mask pattern used as a mask, wherein the semiconductor laser device

produces light having a wavelength in the range of 770 to 810 nm, λ_{dpl} denotes, in nm, the wavelength of photoluminescence generated by application of pump light to the disordered region of the active layer, λ_{apl} represents, in nm, the wavelength of photoluminescence generated by application of pump light to the non-disordered region of the active layer, and λ_{bl} , in nm, is equal to $\lambda_{apl} - \lambda_{dpl}$, including determining that the COD power level that the laser device, when completed, can withstand has been increased when $\lambda_{bl} > 20$.

Claim 8 (Cancelled).

9. (Currently Amended) The semiconductor laser device fabricating method according to claim ~~8~~ 7, wherein, when P_{cod} denotes, in mW, the COD power level that the laser device can withstand,

$$(P_{cod} - 85)/5.6 \leq \lambda_{bl} \leq (P_{cod} - 135.0)/1.3.$$